give the waste gas flue sufficient area to reduce its frictional resistance to the passage of the gases to a minimum.

Assuming for the waste gas flue, considered as an inverted weir, a width of 1 m, its height will be determined by YesmamVs formula :

V

$$1^2X120Q^{==Q\ inm\ 636>}$$

In order to insure the contact of the hot gases with the hearth of the furnace, the waste gas flue is inclined downward from the hearth level. This provides, at the same time, a pocket into which the cinders from the hearth may drain.

It is now necessary to check the time period of the hot gases in the heating chamber of the furnace and to determine the drop in the temperature of these gases per second.

The average temperature of the hot gases will be

$$1400+1200$$

from which $_t$ Qiaoo = 2 m^3 96.

The volume of the heating chamber of the furnace is equal, according to the dimensions given, to 2 m^3 80. The time during which the hot gases remain in this chamber is therefore in the neighborhood of one second, and the drop in temperature of the gases is in the neighborhood of 200° per second, which may be considered normal for this type of furnace.